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ABSTRACT

This study investigated the adult adjustment (1 year after leaving school) of 615 people with mental disabilities who had graduated from special education programs in Iowa in 1985 and 1986, as well as 62 dropouts who began in the same classes. Current living situation, leisure activities, and marital status were studied, with a special emphasis on employment status. Results indicated that 6.5% of graduates and 10% of dropouts met the criteria for success established for this study (these criteria varied according to instructional program model). Almost all subjects were single and living with a parent or relative. While over two-thirds were in competitive or sheltered jobs, under a third were working full-time. Employed graduates earned an average of $3.11 hourly; dropouts earned $3.51 per hour. Increased support and transitional services are recommended, as well as greater attention to pre-school factors that might provide a better foundation for later life. Includes 26 references. (Author/PB)

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Iowa Statewide Follow-up Study:

Adult Adjustment of Individuals with Mental Disabilities One Year after Leaving School

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Iowa Statewide Follow-up Study:

Adult Adjustment of Individuals with Mental Disabilities

One Year after Leaving School

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Preface

This monograph is one product of the Iowa Statewide Follow-up Study. The follow-up study is a five-year project funded by the Iowa Department of Education, Bureau of Special Education, using EHA Part B discretionary funds. The purpose of this project is to determine the adult adjustment of special education graduates and dropouts (of all disabilities and program models) throughout the state of Iowa. The Iowa Statewide Follow-up Study is a joint effort of the Bureau of Special Education, Iowa Department of Education, the 15 Area Education Agencies in Iowa, Des Moines Public Schools, Iowa Braille and Sight Saving School, and the Division of Special Education, University of Iowa.

We gratefully acknowledge Merry Maitre, who originated the Iowa Statewide Follow-up Study; Dr. Timothy Z. Keith, who helped refine the data gathering procedures; Valerie Cool and Linda Cooper, who served as research associates for the project; and the Special Education Directors, Task Force members, and interviewers, who made the project a success. We also thank the individuals with disabilities who generously shared their stories and experiences with us.

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Abstract

This study investigated the adult adjustment (one year after leaving school) of 615 individuals with mental disabilities who had been graduated from special education programs throughout the state of Iowa in the Classes of 1985 and 1986; the adult adjustment of 62 dropouts who began school in these same classes was also investigated. Current living situation, marital status, and leisure activities were examined. Of particular concern were variables related to employment, such as job type and status, hours worked per week, wages earned, and the relation between employment and predictor variables which involved high school experiences that may have affected current employment (e.g., regular and specially-designed vocational education, and in- and out-of-school employment). Results of the present study were compared with a follow-up study by Hasazi et al. (1985) of 243 youths classified as mentally retarded who exited high school in Vermont between 1981 and 1983.

Iowa Statewide Follow-up Study:

Adult Adjustment of Individuals with Mental Disabilities

One Year after Leaving School

Statistics show that between 50 and 80 percent of adults with disabilities of working age are jobless (McNeil, 1983; U.S. Commission on Civil Rights, 1983). In only a small percentage of cases is this unemployment due to inability to perform a regular, full-time job (Berkeley Planning Associates, 1981). People with disabilities people who are able to find work are more than twice as likely as the nonhandicapped to work part-time (Wolfe, 1980). Additional data (U.S. Department of Education, 1983) indicate that adults with disabilities who do work average over $2,000 less in wages annually than nondisabled co-workers. The cost of dependency among unemployed persons with disabilities is over $115 billion per year (Razeghi & Davis, 1979). Of the 30 million persons with disabilities in the United States, over 11 million are potentially employable; yet only 4.1 million are employed (Ianacone & Tilson, 1983).

A number of follow-up studies were conducted during the period of the 1950s through the 1970s with individuals classified as mentally retarded while attending school (Cassidy & Phelps, 1955; Dinger, 1961; Peck & Stephens, 1968; Peterson & Smith, 1960; Porter & Milazzo, 1958). These studies found that a large percentage of individuals had made satisfactory adjustments in competitive employment. The vast majority of individuals, however, worked at unskilled or semiskilled occupations, with the largest number of jobs in the unskilled areas. In addition, these studies found that economic conditions had an important effect on vocational adjustment, with persons who are mentally retarded being the last to be hired and the first to be fired.

Halpern (1973) followed the graduates of special education vocational programs for persons with mental retardation in the state of Oregon. He found that a) when the level of community unemployment was high, persons with mental retardation could not find jobs; b) persons with mental retardation were not necessarily the first to be fired, once they were hired; and c) students with mental retardation completing vocational programs had a good chance of a job at anytime. Brolin, Durand, Kramer, and Muller (1975) followed 80 special education graduates randomly selected from programs for individuals who mentally retarded in the Minneapolis public schools over the preceding 11 years. They found poor overall vocational adjustment for all, but stated that those who had received some work experience and vocational training while is school were better adjusted than those who had received no such training.

A number of studies concerning the adult adjustment of persons with disabilities have been reported recently (e.g., Clark, Hayden, & Lezzer, 1987; Edgar, 1987; Halpern, no date; Halpern & Benz, 1987; Hasazi, Gordon, & Roe, 1985; Mithaug, Horiuchi, & Fanning, 1985; Neel, Meadows, Levine, & Edgar, 1988). Perhaps the most extensive recent study which focused on the adult adjustment of persons labelled mentally retarded was conducted by Hasazi, Gordon, Roe, Hull, Finck, and Salembier (1985) who investigated the employment and residential status of 243 youths who had exited high school in Vermont between 1981 and 1983. Of the interviewed sample, 46% were employed full time, mostly in unsubsidized service occupations. Almost two-thirds found jobs on their own or with the help of family or friends. Substantially more individuals labelled EMR were employed when compared to those labelled TMR; however, the TMR sample was too small for reliable analyses. Further, many more males than females were employed (56% compared to 23%).

Several predictor variables were investigated which involved school experiences that may have affected current employment status. No significant

relation existed between current employment status and manner of school exit (i.e., graduated, dropped out, left after age 18). A marginal association existed between current employment status and vocational education; somewhat more students who had vocational education were employed than those without vocational education. Hasazi et al. (1985) also examined the relation of summer jobs, school-year part-time jobs, and work experience school programs with current employment status. Higher employment rates were found among those individuals who had summer jobs or part-time school-year jobs. However, no differences in employment status were found between those persons who had work experience programs in high school and those who did not.

Hasazi et al. (1985) reported that statistically reliable relations were found between wages and selected high school variables. Higher wages were associated with vocational education and with part-time work outside of school for those individuals who lived in urban locations. An inverse relation existed between wages and participation in work experience programs where those without work experience training reported higher wages than those with such training.

The present study was designed to investigate the adult adjustment (one year after graduation) of individuals labelled mentally disabled. This investigation was a subcomponent of the Iowa Statewide Follow-up Study, which is a five-year project designed to study a random sample of special education graduates and dropouts (of all disabilities and program models) throughout the state of Iowa. Cohorts of the target population will be interviewed one, three, and five years after leaving school. The adjustment variables investigated are very similar to those of the Hasazi et al. (1985) study, but greater emphasis has been placed in the data analysis on comparisons across levels of handicap and gender.

Method

Subjects

The sample for this investigation is a merged data set from two separate classes (Classes of 1985 and 1986), each surveyed one year after their class was scheduled to be graduated. Each of the fifteen Area Education Agencies (AEAs) in the state of Iowa prepared a list of special education students (all exceptionalities) who were graduated from, or "aged out" of, high school at the end of each target year; a similar list was prepared of all special education dropouts who would have completed high school at the end of the target year. For each AEA, 50% of the students on each list (graduates and dropouts) were randomly selected for inclusion in the sample each target year.

School records of individuals in the sample were examined to obtain relevant information, including each student's primary disability label and program model at the time of exit from school. Of the total sample of 2,476 former special education students, 840 had been identified as mentally disabled while in school. Iowa Department of Education rules require that students must have an IQ of greater than one standard deviation below the mean on an individually administered intelligence test and exhibit an adaptive behavior deficit in order to be labelled mentally disabled. This definition encompasses a greater proportion of the population than does the more common definition utilizing a two standard deviation cutoff point on intelligence tests (Reschly, Robinson, Volmer, & Wilson, 1988). Of the 840 former students labeled mentally disabled, 682 (81%) were actually interviewed. Students who had attended state institutions for the mentally retarded (n = 4) were also excluded due to the small number, as was one individual for whom too much information was missing. Therefore, the total number of individuals included in the analyses of data equalled 677.

Relevant data for individuals who were graduated from special education programs (n = 615) are presented in Table 1. Program model in Table 1 refers to the type of special education instructional model in which the individual was last enrolled while in high school. In programs designated resource teacher programs (RTP), students are placed for a minimal average of thirty minutes per day; these students attended regular classes for the remainder of each school day. In the special classes with integration model (SCIN), students attend special classes for the majority of the school day, while participating in the general education curriculum in one or more academic subjects. Students in special classes with little integration (SCIN-L) are "mainstreamed" into regular classes for limited participation. In self-contained special classes (SCC), the instructional program is provided by a special education teacher.

Meaningful comparisons between program graduates and dropouts across program models were not possible due to the small number of dropouts. Of the 62 dropouts labelled mentally disabled in the sample, 20 had attended resource teacher programs (RTP), 35 were enrolled in special classes with integration (SCIN), 6 were in special classes with little integration (SCIN-L), and only 1 individual dropped out of a self-contained special class (SCC). Table 2 contains descriptive data concerning individuals from RTP and SCIN programs.

The test data presented in Table 1 and 2 represent the most recent test scores available in the student's file. Mean full scale IQ scores were very similar to those found by Reschly et al. (1988) when they investigated a random sample of mental disability students across the state. Reading and math functioning level cannot be compared, since Reschly et al. did not use grade equivalent scores.

Table 1

Selected characteristics of sample prior to graduation (Graduates)

Variable	Total Group	Program Model			
		RTP	SCIN	SCIN-L	SCC
Gender	(n = 615)	(n = 142)	(n = 305)	(n = 122)	(n = 46)
% Male	55.0	41.5	58.4	60.7	58.7
% Female	45.0	58.5	41.6	39.3	41.3
Full Scale IQ	(n = 589)	(n = 134)	(n = 296)	(n = 117)	(n = 42)
M	70.53	77.68	73.04	64.35	47.31
SD	12.31	5.66	8.42	13.88	11.79
Academic Achievement					
Math G.E.	(n = 569)	(n = 139)	(n = 299)	(n = 108)	(n = 23)
M	5.03	6.20	5.20	3.75	1.76
SD	2.01	1.71	1.69	1.88	1.23
Reading G.E.	(n = 578)	(n = 140)	(n = 299)	(n = 110)	(n = 29)
M	4.84	6.03	4.85	4.02	2.19
SD	2.17	2.22	1.95	1.89	1.07

Table 2
Selected characteristics of sample prior to graduation (Dropouts)

Variable	Total Group	Program Model	
		RTP	SCIN
Gender	(n = 55)	(n = 20)	(n = 35)
% Male	54.5	40.0	62.9
% Female	45.5	60.0	37.1
Full Scale IQ	(n = 54)	(n = 19)	(n = 35)
M	76.02	78.47	74.69
SD	7.43	6.37	7.71
Academic Achievement			
Math G.E.	(n = 54)	(n = 19)	(n = 35)
M	5.31	6.51	4.66
SD	1.89	1.85	1.59
Reading G.E.	(n = 54)	(n = 19)	(n = 35)
M	5.34	6.26	4.83
SD	2.21	2.43	1.93

Instrumentation

The survey instrument used in this study was developed by project staff in conjunction with a task force of representatives of the 15 AEAs in the state of Iowa, the largest public school district in the state, and the state schools and correctional facilities. This task force identified the content areas to be covered in the interview form, based on previous follow-up studies conducted in other states and on other categories of information task force members felt would be useful in making programming decisions in their AEAs.

The survey form was piloted in Year 1 of the study on a random sample of 878 subjects from throughout the state. The initial form contained a number of open-ended items; the most common responses to these items were incorporated into response choices for the revised instrument used in the current study. In addition, interviewer and coder comments were used to further refine questions that seemed to cause problems in interpretation.

The survey instrument was designed to provide the following types of information: background information about students (e.g., test scores from high school, disability label, instructional program model); information pertaining to their high school programs (e.g., number of regular and special vocational education courses taken, extracurricular activities); evaluations of their school experiences (e.g., did your school experiences help you to keep a job?); information about current life circumstances (e.g., marital status, living arrangements, leisure activities); and information on past and current employment (e.g., job experiences during high school, location of current job, salary, and hours worked).

Procedure

Interviews were conducted by professionals such as work experience coordinators, consultants, school psychologists, and teachers from the

student's school district or AEA. These paid interviewers were trained and supervised by the task force member from their respective AEAs. In addition, an indepth interviewer handbook and sample interview forms were developed by project staff, and interviewers also participated in one of several one-hour training sessions on using these documents to insure consistency across interviewers. The project director was on call to answer any general or specific questions arising from actual interviews. Interviewers were instructed to conduct a face-to-face interview with the former student, if possible. When the student could not be contacted either in person or by telephone, an individual such as a parent, spouse or sibling was interviewed. Of the interviews analyzed in this study, 62% were face-to-face with the former student, 17% were by telephone with the former student, 8% were face-to-face with a parent or guardian, and 13% were through a telephone interview with a parent or guardian.

All survey forms were first returned to the task force member for an initial content and completion check. Next, the forms were submitted to the Iowa Department of Education for a second content and completion check and for removal of any identifying information other than the student's ID number. All surveys were then forwarded to The University of Iowa for a final content check, coding, computer entry and analysis.

Data analyses were completed using routines described in the SPSS-X User's Guide (1986). Results are reported first for program graduates, then for dropouts. For each group, general characteristics are reported first; in the second section, employed individuals are further described. The third section contains a comparison of employed and unemployed individuals on selected variables. The fourth section provides a description of those individuals who were judged to have made a "successful" adjustment to post-high school life. Information concerning dropouts is presented only for

individuals from RTP and SCIN programs. There were insufficient numbers of dropouts of SCIN-L and SCC programs to allow for generalization of results.

Results

Program Graduates

General Status

General status variables concerning program graduates involved in this investigation are presented in Table 3. Most program graduates reported their marital status as single at the time of the interview. A small number of individuals graduating from RTP, SCIN, or SCIN-L programs indicated they were married, separated or divorced.

By far the most commonly reported living arrangement was with parents or other relatives (68%). Independent living was the next most common arrangement for persons from RTP and SCIN programs, while persons from SCIN-L and SCC programs were more often in group homes or supervised apartments.

Over 90% of the program graduates were involved in some type of leisure activities, with most reporting they participated in from one-to-three leisure activities. Students with milder handicaps tended to be involved in a greater number of activities than were those from more restrictive programs. The most frequently mentioned leisure activity for individuals from RTP and SCIN programs was socializing with family and friends, whereas SCIN-L and SCC graduates most often named music as a leisure activity. The second most frequently mentioned activity was athletics, except for SCIN-L individuals who also mentioned socializing with family and friends. The least often named leisure activity was going to bars, except for SCIN graduates, who named dancing. Other activities seldom named were cooking, eating out, and driving around.

During the interview, program graduates were asked about their current occupation. The proportion of individuals indicating they were currently

Table 3
General post-high school characteristics (Graduates)

Variable	Total Group*	Program Model*			
		RTP	SCIN	SCIN-L	SCC
Marital Status	(n = 614)	(n = 142)	(n = 304)	(n = 122)	(n = 46)
Single	91.5	89.4	90.5	93.4	100.0
Married	7.0	9.2	8.6	3.3	0.0
Divorced	0.7	1.4	0.3	0.8	0.0
Other	0.8	0.0	0.6	2.4	0.0
Living Situation	(n = 614)	(n = 142)	(n = 304)	(n = 122)	(n = 46)
Residential facility	2.8	0.0	2.0	6.6	6.5
Parents or relative	68.3	68.3	69.8	68.0	58.7
Group home/ suprvsd apt.	6.7	1.4	3.6	9.8	34.8
Live with friend	3.4	2.8	2.6	7.4	0.0
Live indepndtly	12.9	16.9	15.5	6.6	0.0
Buying own home	2.3	4.9	2.0	0.8	0.0
Other	3.7	5.6	4.6	0.8	0.0
Leisure Activities	(n = 615)	(n = 142)	(n = 305)	(n = 122)	(n = 46)
None	7.6	6.3	8.9	7.4	4.3
1 to 3	64.4	56.3	66.2	61.5	84.8
4 to 6	18.0	19.0	17.7	21.3	8.7
7 to 9	6.0	7.7	5.2	7.4	2.2
More than 9	3.9	10.6	2.0	2.5	0.0
Doing Now	(n = 602)	(n = 136)	(n = 301)	(n = 120)	(n = 45)
Homemaker	4.3	5.9	3.7	5.8	0.0
Student/Job training	3.7	5.8	4.3	0.8	0.0
Disabled	3.0	0.7	2.3	7.5	2.2
Unable to find work	12.5	11.0	15.3	10.8	2.2
Fired/ laid off	3.0	4.4	3.0	2.5	0.0
Quit last job	1.8	2.9	2.0	0.8	0.0
Full/part-time work	67.3	64.7	66.1	65.1	88.9
Other	4.5	4.4	3.3	6.7	6.6

* Values are expressed as percentages by column within each variable. Percentages may not sum to 100 because of rounding error.

employed (at least part-time) ranged from 65% (RTP) to 89% (SCC), and 67% for the total group. The types and locations of jobs are discussed below. An additional 8% of the total group was "otherwise meaningfully engaged" (homemaker, student, or in job training), ranging from 12% (RTP) to 0% (SCC).

Characteristics of Employed

Each respondent's current occupation was categorized by the interviewer as competitive employment; community-based, but employed by sheltered workshop; or sheltered employment. For the total group, close to three-fourths were in competitive employment, one-fourth in sheltered workshops, and a few in community-based employment sponsored by sheltered workshops (see Table 4). Similar proportions were found for both males and females. Almost all employed RTP graduates held jobs in competitive employment, as did the majority (81%) of graduates of SCIN programs. Approximately one-half of SCIN-L programs were in competitive employment (49%) and one-third in sheltered workshops (35%) with a few individuals working in community-based employment sponsored by sheltered workshops. Approximately three-fourths of SCC program graduates were employed in sheltered workshops, with the remainder about evenly divided between competitive jobs and community-based jobs, but employed by sheltered workshops.

Occupations were classified according to Duncan's classification system (Reiss, Duncan, Hatt, & North, 1961). Almost all employed individuals in this investigation (81%) had low status jobs as laborers or service workers (see Table 5). A few graduates of each program held jobs as operatives or craftsmen. This pattern held true for both males and females from RTP and SCIN programs only. No females from SCIN-L and SCC programs held jobs as operatives or craftsmen.

Only 43% of the total group were employed full time, with an additional 44% working between 21-37 hours per week (see Table 6). Males were more often

Table 4
Location of employment (Graduates)

Program Model	n	Location of employment[a]		
		Community Competitive	Community[b] Workshop	Sheltered Workshop
RTP				
Males	40	97.5	0.0	2.5
Females	46	97.8	2.2	0.0
Total subgroup	86	96.6	1.2	1.2
SCIN				
Males	127	81.9	7.1	11.0
Females	70	78.6	1.4	20.0
Total subgroup	197	80.7	5.1	14.2
SCIN-L				
Males	47	57.4	10.6	31.9
Females	31	35.5	25.8	38.7
Total subgroup	78	48.7	16.7	34.6
SCC				
Males	25	4.0	16.0	80.0
Females	16	18.8	12.5	68.8
Total subgroup	41	9.8	14.6	75.6
Total group				
Males	239	71.5	7.5	20.9
Females	163	69.9	7.4	22.7
Total	402	70.9	7.5	21.6

[a] Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.
[b] Individuals are working over half of the time in the community, but as part of a mobile work crew or small group supervised by sheltered workshop or work activity center personnel.

Table 5
Type of employment (Graduates)

Program Model	n	Type of employment[a]				
		Laborer	Service Worker	Operative[b]	Craftsman	Other
RTP						
Males	39	53.8	17.9	17.9	7.7	2.6
Females	46	8.7	80.4	10.9	0.0	0.0
Total subgroup	85	29.4	51.8	14.1	3.5	1.2
SCIN						
Males	128	47.7	35.2	10.9	4.7	1.6
Females	70	15.7	72.9	1.4	1.4	8.6
Total subgroup	198	36.4	48.5	7.6	3.5	4.0
SCIN-L						
Males	44	50.0	38.6	11.4	0.0	0.0
Females	29	44.8	48.3	0.0	0.0	6.8
Total subgroup	73	47.9	42.5	6.8	0.0	2.8
SCC						
Males	23	47.8	30.4	21.7	0.0	0.0
Females	15	60.0	40.0	0.0	0.0	0.0
Total subgroup	38	52.6	34.2	13.2	0.0	0.0
Total group						
Males	234	49.1	32.5	13.2	3.8	1.3
Females	160	23.1	67.5	3.7	0.6	5.0
Total	394	38.6	46.7	9.4	2.5	2.8

[a] Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.
[b] E.g., meat cutter, assembler, machine operator, truck driver, shipping clerk.

Table 6
Number of hours employed per week (Graduates)

Program Model	n	Hours per week*		
		<21	21 - 37	>37
RTP				
Males	23	17.4	13.0	69.6
Females	20	15.0	35.0	50.0
Total subgroup	43	16.3	23.3	60.5
SCIN				
Males	56	1.8	48.2	50.0
Females	39	25.6	53.8	20.5
Total subgroup	95	11.6	50.5	37.9
SCIN-L				
Males	28	7.1	71.4	21.4
Females	17	11.8	58.8	29.4
Total subgroup	45	8.9	66.7	24.4
SCC				
Males	12	8.3	83.3	8.3
Females	7	42.9	57.1	0.0
Total subgroup	19	21.1	73.7	5.3
Total group				
Males	119	6.7	50.4	42.9
Females	83	21.7	50.6	27.7
Total	202	12.9	50.5	36.6

* Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

employed full-time than females. The trend in number of hours worked per week across levels of handicap shifts as a function of program model with most working full-time (less restrictive) to most working between half- and full-time (more restrictive).

A mean wage was calculated for the total group as well as for males, females, and program model (see Table 7). The mean wage for the total group was $3.21 per hour, with the average wage for males being approximately 70 cents per hour greater than for females. Wages were also placed into three intervals around the minimum wage of $3.35 per hour. The only instance where more than half the individuals were receiving greater than $3.95 per hour involved males who were graduated from RTP programs. Further, the clear trend in RTP, SCIN, and SCIN-L program graduates is for males to receive higher wages than females.

Individuals interviewed were also asked to indicate the main person that helped them get their current job. The majority of individuals who completed RTP and SCIN programs relied on either themselves, family, or friends in finding employment, while fewer sought help from school or community agencies (see Table 8). Almost half the individuals from SCIN-L and SCC programs relied upon school personnel for help in obtaining employment.

Comparison of Employed/Unemployed

Chi-square tests were conducted to analyze the data related to employment/unemployment because of the importance placed on work in post-school adjustment. A .05 level of probability was used as the criterion level for significance.

A 3-way chi-square test was conducted to examine the proportions of employed and unemployed individuals by level of handicap and gender. A significant statistic, X^2 (1, n = 151) = 3.89, p = 0.0485, was obtained for those graduates who had been in RTP programs. In this case, a greater

Table 7
Wages per hour (Graduates)

Program Model	n	M	Wages per hour*		
			<$3.35	$3.35-$3.95	>$3.95
RTP					
Males	30	$4.18	6.7	30.0	63.3
Females	41	$3.16	31.7	53.7	14.6
Total subgroup	71	$3.59	21.1	43.7	35.2
SCIN					
Males	116	$3.78	22.4	44.8	32.8
Females	63	$3.09	28.6	58.7	12.7
Total subgroup	179	$3.53	24.6	49.7	25.7
SCIN-L					
Males	34	$2.82	32.4	55.9	11.8
Females	23	$2.03	73.9	21.7	4.3
Total subgroup	57	$2.50	49.1	42.1	8.8
SCC					
Males	15	$1.42	73.3	26.7	0.0
Females	10	$1.36	80.0	20.0	0.0
Total subgroup	25	$1.40	76.0	24.0	0.0
Total group					
Males	195	$3.49	25.6	43.1	31.3
Females	137	$2.81	40.9	48.2	10.9
Total	332	$3.21	31.9	45.2	22.9

* Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

Table 8
Source of help in finding employment (Graduates)

Program Model	n	Source of Help*				
		Self	School	Family/ Friends	Community Agency	Other
RTP						
Males	41	29.3	4.9	46.3	12.2	7.3
Females	46	39.1	4.3	47.8	6.5	2.2
Total subgroup	87	34.5	4.6	47.1	9.2	4.6
SCIN						
Males	127	24.4	18.9	37.0	13.4	6.3
Females	70	28.6	17.1	30.0	14.3	10.0
Total subgroup	197	25.9	18.3	34.5	13.7	7.6
SCIN-L						
Males	46	17.4	34.8	13.0	19.6	15.2
Females	31	9.7	58.1	12.9	9.7	9.7
Total subgroup	77	14.3	44.2	13.0	15.6	13.0
SCC						
Males	25	4.0	56.0	16.0	8.0	16.0
Females	16	0.0	37.5	31.3	12.5	18.8
Total subgroup	41	2.4	48.8	22.0	9.8	17.1
Total group						
Males	239	21.8	23.4	31.8	13.8	9.2
Females	163	25.2	23.3	31.9	11.0	8.6
Total	402	23.1	23.4	31.8	12.7	9.0

* Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

proportion of males than females were employed (75% and 59%, respectively). A significant statistic, X^2 (1, n = 304) = 7.74, p = 0.0054, was also obtained for individuals from SCIN programs. Seventy-three percent of the males were employed, compared to 57% of the females. There were no significant differences in the proportions of employed males and females from SCIN-L and SCC programs. Approximately two-thirds of the males and females from SCIN-L programs were employed, and most persons from SCC programs were employed (93% of the males and 84% of the females).

Data concerning the types of vocational education received by program graduates are summarized in Tables 9 and 10. Three-way chi-square tests were conducted to examine the proportions of employed and unemployed individuals by program model and type of vocational education received in high school. Regular vocational education programs (e.g., industrial arts, home economics, distributive education, trades and industry) and specially-designed vocational programs (e.g., school-based simulated work, experiential exploration, work experience, etc.) were considered separately. In the first analysis, which focused on regular vocational education programs, almost all individuals who were in RTP or SCI programs in high school had participated in some type of regular vocational education (see Table 9). Fewer individuals who were in SCIN-L or SCC high school programs were involved in regular vocational education. The second analysis focused on specially-designed vocational programs. Approximately one-half of graduates of RTP programs had received specially-designed vocational training of some type (see Table 10). Among other program model graduates, over 80% had been involved in one or more specially-designed vocational programs. No significant chi-square statistics were obtained in either analysis, indicating that the proportions of employed and unemployed graduates from each program model who had participated in regular vocational education were not substantially different from those who

Table 9
Types of regular vocational training by current employment status (Graduates)[a]

Program Model	Total Level		Types of Regular Vocational Training/Experiences					
			No Training		General Training Only		Specific Training[b]	
	n	%	n	%	n	%	n	%
RTP								
Employed	91	65.0	3	50.0	39	79.6	49	57.6
Unemployed	49	35.0	3	50.0	10	20.4	36	42.4
SCIN								
Employed	195	66.8	12	63.2	93	65.0	90	69.2
Unemployed	97	32.2	7	36.8	50	35.0	40	30.8
SCIN-L								
Employed	73	65.8	28	70.0	29	63.0	16	64.0
Unemployed	38	34.2	12	30.0	17	37.0	9	36.0
SCC								
Employed	39	90.7	30	90.9	8	88.9	1	100.0
Unemployed	4	9.3	3	9.1	1	11.1	0	0.0
Total Group								
Employed	398	67.9	73	74.5	169	68.4	156	64.7
Unemployed	188	32.1	25	25.5	78	31.6	85	35.3

Note. Individuals may have had specially-designed vocational programs.
[a] Values are expressed as percentages by column within each level.
[b] Individuals may have also had general training.

Table 10
Types of specially-designed vocational training by current employment status (Graduates)[a]

Program Model	Types of Vocational Programs							
	Specially-designed Program		No special Program		Work Experience[b]		No Work Experience	
	n	%	n	%	n	%	n	%
RTP								
Employed	52	68.4	40	61.5	26	70.3	66	63.5
Unemployed	24	31.6	25	38.5	11	29.7	38	36.5
SCIN								
Employed	173	65.5	28	70.0	122	62.2	79	73.1
Unemployed	91	34.5	12	30.0	74	37.8	29	26.9
SCIN-L								
Employed	68	67.3	11	55.0	42	63.6	37	67.3
Unemployed	33	32.7	9	45.0	24	36.4	18	32.7
SCC								
Employed	37	90.2	4	80.0	16	100.0	25	83.3
Unemployed	4	9.8	1	20.0	0	0.0	5	16.7
Total Group								
Employed	330	68.5	83	63.8	206	65.4	207	69.7
Unemployed	152	31.5	47	36.2	109	34.6	90	30.3

Note. Individuals may have had regular vocational training/experiences.
[a] Values are expressed as percentages by column within each level.
[b] Work experience is a subcategory of specially-designed vocational programs.

had no regular vocational training, as was the case with employed and unemployed individuals from each program model who were involved in some type of specially-designed vocational program.

Because of the widespread belief in the value of work experience programs for students labelled mentally retarded, a 3-way chi-square test was conducted concerning this specific subcategory of specially-designed vocational programs by employment status and controlling for special education program model. Less than one-third of those persons from RTP programs had been involved in work experience programs (see Table 10). Substantially greater proportions of individuals from the other special education program models had participated in work experience programs (65%, 55%, and 35%, respectively). It is interesting to note that no unemployed SCC graduates had received work experience training. The small number of individuals at this level, however, suggests caution in interpreting this finding. No significant chi-square statistics were obtained in this analysis, suggesting that for graduates of each special education program model, there were no substantial differences between the proportions of employed and unemployed individuals who had been involved in work experience programs versus those who had not.

An additional three-way chi-square was conducted to further examine the association between employment status, and type of regular vocational education for graduates of each special education program model. For this analysis regular vocational education was divided into general vocational education (i.e., industrial arts and home economics) and specific vocational education (i.e., office education, health occupations education, distributive education, agricultural education, and trades and industry). Individuals were assigned to one of three categories: a) those who had no regular vocational education, b) those who had at least one type of general vocational education experience, but no specific vocational education experiences, and c) those who

had at least one specific vocational education experience (and may have had some general vocational education experiences as well). A significant statistic, X^2 (2, n = 140) = 7.20, p = 0.0273, was obtained for individuals completing RTP programs. All but six individuals had completed some form of regular vocational education program. Eighty percent of those RTP individuals who had received general training were employed (far above the average for RTP graduates--65%). At the same time, only 58% of those with specific training were employed (see Table 9). Further examination of the specific types of training received by RTP persons revealed that more employed than unemployed individuals had taken office education (36 and 27, respectively), equal numbers of employed and unemployed had taken health occupations education and agricultural education (7 and 9, respectively), and more employed individuals had taken distributive education (6 compared to 2) and trades and industry (8 compared to 3).

A 3-way chi-square test was also conducted to determine if there was an association between paid employment during high school and post-school employment for graduates of each special education program model. Paid employment was defined as at least one paying job; persons with subsidized jobs were grouped with individuals who had no jobs during high school. No significant statistics were obtained in this analysis, indicating that the proportion of employed and unemployed persons within each program model who had paid employment during high school was similar to the proportion of employed and unemployed persons who did not have paid employment. Of those RTP and SCIN graduates who had paid jobs, about two-thirds were employed, and one-third were not. The proportions were slightly higher for graduates of SCIN-L and SCC programs.

"Successful" Graduates

The overall adjustment of individuals was also of interest in this study. "Successful" graduates were defined somewhat differently depending upon the program model. Graduates of RTP and SCIN programs were considered to have made a successful adjustment to adult life if they were: a) employed (full- or part-time), b) buying a home, living independently, or living with a friend, c) paying more than half their living expenses, and d) involved in more than three leisure activities. Nine (9) persons met these criteria. Graduates of SCIN-L and SCC programs were judged to have been successful in making the transition to adult life if they were: a) employed, b) buying a home, living independently, living with a friend, living in a supervised apartment, or living in a group home, c) paying at least some of their living expenses, and d) involved in more than three leisure activities. Six (6) individuals met these criteria. In all, only 15 individuals, 2.4% of the 615 graduates in this investigation, were considered to have made a successful adjustment to adult life.

The criteria for "successful" graduates are perhaps too high since the former special education students had been graduated from high school only one year previously. Therefore, a second set of criteria were selected for these persons, lessening the standards for success in every category. Graduates of RTP and SCIN programs were judged to be "successful" if they were: a) not employed but were homemakers, students, or involved in job training, b) buying a home, living independently, living with a friend, or living with a parent or relative, c) paying at least a portion of their living expenses, and d) involved in more than one leisure activity. Nineteen (19) graduates met these criteria. Graduates of SCIN-L and SCC programs were judged to be "successful" if they met a somewhat less stringent set of criteria: a) not employed but were homemakers, students, or involved in job training, b) buying a home,

living independently, living with a friend, living with a parent or relative, or living in a group home or supervised apartment, c) paying none or some of their living expenses, and d) involved in more than one leisure activity. Six (6) persons met these criteria. When combined, these two groups of "successful" individuals comprise 25 individuals, about 4% of the total number of graduates interviewed.

The percentage of graduates who were "successful" as defined by the two sets of criteria in this investigation equalled 40 individuals, about 6.5% of the 615 graduates interviewed.

Dropouts

General status

As mentioned previously, there were a total of 62 dropouts labelled mentally disabled in the sample. Of those, 20 had attended resource teacher programs (RTP), 35 were enrolled in special classes with integration (SCIN), 6 were in special classes with little integration (SCIN-L), and only 1 individual dropped out of a self-contained special class (SCC). General status variables concerning dropouts are presented in Table 11 for dropouts from RTP and SCIN programs. It should be remembered that dropouts were surveyed with their original class, one year after that class was graduated. Thus, dropouts may have been out of school anywhere from one to four years at the time of the interview. About three-fourths of these individuals reported their marital status as single; the majority of the remaining persons were married. The most common living arrangement was with parents or relatives (about one-half), and the next most frequently mentioned living arrangement was living independently. Between one-half and three-fourths of the dropouts reported they were involved in from one to three leisure activities.

Table 11
General post-high school characteristics (Dropouts)

Variable	Total Group*	Program Model*	
		RTP	SCIN
Marital Status	(n = 55)	(n = 20)	(n = 35)
Single	78.2	70.0	82.9
Married	20.0	30.0	14.3
Divorced	0.0	0.0	0.0
Other	1.8	0.0	2.9
Living Situation	(n = 55)	(n = 20)	(n = 35)
Residential facility	3.6	0.0	5.7
Parents or relative	54.5	45.0	60.0
Group home/supervised apt.	0.0	0.0	0.0
Live with friend	10.9	20.0	5.7
Live independently	27.3	30.0	25.7
Buying own home	1.8	5.0	0.0
Other	1.8	0.0	2.9
Leisure Activities	(n = 54)	(n = 20)	(n = 34)
None	3.7	0.0	5.9
1 to 3	66.7	55.0	73.5
4 to 6	20.4	35.0	11.8
7 to 9	7.4	10.0	5.9
More than 9	1.9	0.0	2.9
Doing Now	(n = 54)	(n = 20)	(n = 34)
Homemaker	14.8	15.0	14.7
Student/job training	3.7	0.0	5.9
Disabled	3.7	0.0	5.9
Unable to find work	33.3	25.0	38.2
Fired/laid off	7.4	5.0	8.8
Quit last job	3.7	5.0	2.9
Full/part-time work	22.3	30.0	17.6
Other	11.1	20.0	5.9

* Values are expressed as percentages by column within each variable. Percentages may not sum to 100 because of rounding error.

Dropouts were asked during the interview about their current occupational status. Twenty-two percent of the individuals said they were employed at least part-time; employment ranged from 30% (RTP) to 18% (SCIN). The types and locations of jobs are discussed below. An additional 19% of the total group indicated that they were "otherwise meaningfully engaged" as homemakers, students, or in job training programs; the range was from 15% for RTP to 21% for SCIN dropouts.

Characteristics of Employed

The eleven dropouts (8 males and 3 females) who were employed all held jobs in competitive employment. The majority of males (75%) worked as laborers, whereas the majority of females (67%) were employed as service workers (see Table 12). A relatively small proportion (13%) of the males were employed as operatives. Approximately two-thirds of the males and females were employed full-time (see Table 13). The average wage per hour for males was $3.63; females earned an average of about 40 cents per hour less than males (see Table 14).

Between one-half and two-thirds of the employed dropouts obtained assistance from family and friends in finding employment, and about one-third of these persons found employment on their own (see Table 15). None of the eleven employed dropouts reported that they received assistance from school personnel in finding work, and a relatively small number used community agencies for help.

Comparison of Employed/Unemployed

A chi-square test was conducted to examine the proportions of employed and unemployed individuals from RTP and SCIN programs by gender. The proportions of males and females who were employed and unemployed were not significantly different in the statistical sense. Among those employed, three-fourths were male and one-fourth were female. About equal numbers of males and females were unemployed.

Table 12
Type of employment (Dropouts)

RTP and SCIN	n	Type of employment[a]				
		Laborer	Service Worker	Operative[b]	Craftsman	Other
Males	8	75.0	12.5	12.5	0.0	0.0
Females	3	33.3	66.7	0.0	0.0	0.0
Total	11	63.6	27.3	9.1	0.0	0.0

[a] Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.
[b] E.g., meat cutter, assembler, machine operator, truck driver, shipping clerk.

Table 13
Number of hours employed per week (Dropouts)

RTP and SCIN	n	Hours per week[a]		
		<21	21 - 37	>37
Males	8	12.5	25.0	62.5
Females	3	0.0	33.3	66.7
Total	11	9.1	27.3	63.6

[a] Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

Table 14
Wages per hour (Dropouts)

RTP and SCIN	n	M	Wages per hour*		
			<$3.35	$3.35-$3.95	>$3.95
Males	8	$3.63	28.6	42.9	28.6
Females	3	$3.25	33.3	66.7	0.0
Total	11	$3.51	30.0	50.0	20.0

* Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

Table 15
Source of help in finding employment (Dropouts)

RTP and SCIN	n	Source of Help*				
		Self	School	Family/ Friends	Community Agency	Other
Males	8	37.5	0.0	50.0	12.5	0.0
Females	3	33.3	0.0	66.7	0.0	0.0
Total	11	36.4	0.0	54.5	9.1	0.0

* Values are expressed as percentages by row. Percentages may not sum to 100 because of rounding error.

Data concerning the types of vocational education received by dropouts are summarized in Tables 16 and 17. Chi-square tests, which involved only individuals from RTP and SCIN programs, were conducted to examine the proportions of employed and unemployed individuals by type of vocational education. In the first analysis, which focused on regular vocational programs, all employed individuals had received some type of training, and the majority (83%) of the unemployed also had been in some type of regular training program (see Table 16). The second analysis focused on specially-designed vocational programs. Two-thirds of the employed persons had received this type of training; half of the unemployed persons were involved in specially-designed vocational programs while in high school (see Table 17). When work experience was considered separately, 58% of the employed persons and 69% of the unemployed persons had received specially-designed programs. None of the three chi-square tests described above yielded statistically significant results.

An additional chi-square test was conducted to further examine the association between employment status and type of regular vocational education. For this analysis regular vocational education was divided into general vocational education and specific vocational education. As with the same analysis involving program graduates, individuals were assigned to one of three categories: a) those who had no regular vocational education, b) those who had at least one type of general vocational education experience, but no specific vocational education experiences, and c) those who had at least one specific vocational education experience (and may have had some general vocational education experiences as well). The chi-square statistic was not significant. All employed individuals had completed some type of regular vocational education, one-third of which had participated in some type of specific training. A few (17%) of the unemployed persons had received no

Table 16
Types of regular vocational training by current employment status (Dropouts)[a]

RTP and SCIN	Total Level n	Total Level %	Types of Regular Vocational Training/Experiences: No Training n	No Training %	General Training Only n	General Training Only %	Specific Training[b] n	Specific Training[b] %
Employed	11	20.8	0	0.0	7	26.9	4	20.0
Unemployed	42	79.2	7	100.0	19	73.1	16	80.0

Note. Individuals may have had specially-designed vocational programs.
[a] Values are expressed as percentages by column within each level.
[b] Individuals may have also had general training.

Table 17
Types of specially-designed vocational training by current employment status (Dropouts)[a]

RTP and SCIN	Specially-designed Program n	Specially-designed Program %	Types of Vocational Programs: No special Program n	No special Program %	Work Experience[b] n	Work Experience[b] %	No Work Experience n	No Work Experience %
Employed	8	27.6	4	16.0	5	27.8	7	19.4
Unemployed	21	72.4	21	84.0	13	72.2	29	80.6

Note. Individuals may have had regular vocational training/experiences.
[a] Values are expressed as percentages by column within each level.
[b] Work experience is a subcategory of specially-designed vocational programs.

regular vocational training, about half (45%) had been involved in general programs only, and 38% had specific regular vocational training.

A chi-square test was also conducted to determine if there was an association between paid employment during high school and post-school employment. Paid employment was defined as at least one paying job; persons with subsidized jobs were grouped with individuals who had no jobs during high school. A significant statistic was not obtained. One-half of the employed individuals had paid jobs during high school; the other half did not. The same proportions were found among unemployed individuals.

"Successful" Dropouts

The overall adjustment of dropouts was also of interest in this study. "Successful" was defined in this analysis in the same way as for program graduates. Dropouts of RTP and SCIN programs were considered to have made a successful adjustment to adult life if they were: a) employed (full- or part-time), b) buying a home, living independently, or living with a friend, c) paying more than half their living expenses, and d) involved in more than three leisure activities. None of the dropouts met these criteria. When the less stringent success criteria used with RTP and SCIN program graduates were applied to this group of dropouts, 6 individuals (10% of the dropouts) were identified.

Discussion

The results of this study indicate that individuals labelled mentally disabled who have been out of school one year have far to go to reach our goal of adult adjustment, with only 6.5% of the program graduates and 10% of the dropouts interviewed meeting the criteria used in this study for being "successful." Results in specific areas of adult adjustment will be discussed below, in terms of the graduation status (program graduates versus dropouts),

levels of handicap (as defined by program placement), and gender. The results also will be contrasted with results from Hasazi et al. (1985), since the target populations of the studies were similar. Comparisons between the present study and Hasazi et al. should be viewed with some caution, however, because all program graduates in the present study had been out of school for only one year, whereas some participants in the later study had been out of school for about two years. In addition, Iowa uses a definition of mental disabilities (mental retardation) which results in a greater proportion of students being so labelled than in most other states.

Almost all individuals (regardless of graduation status, level of handicap or gender) were single and living with a parent or relative. It is encouraging that over 90% of all individuals interviewed were involved in at least one leisure activity.

In terms of overall employment, the present study found 67% of the program graduates in competitive jobs or sheltered work, with a higher percentage of employment (89%) among the individuals from the most restrictive program (SCC). When location of employment of SCC graduates is examined, however, the majority of these individuals were employed in sheltered workshops. It was encouraging that all graduates of RTP programs that were employed were working in competitive jobs in the community. The employment rate for dropouts was much lower with only 18% employed full- or part-time; however, all these individuals worked in competitive jobs.

Although the percent of employment among program graduates could be viewed with some optimism, only slightly over one-third of the employed group was working full-time, with the number of hours worked per week decreasing as the level of handicap increased. The fact that males were employed for a greater number of hours per week than females (with the exception of SCIN-L students) also raises questions. The few dropouts who were employed did have

full-time jobs; this was true for both males and females. The employment percentages for program graduates were higher than that found by Hasazi et al. for graduates and dropouts (46% employed); however, the percentage of program graduates employed full-time was somewhat lower than in the Hasazi, et al. study where 46% of those employed were full-time.

The average wage among program graduates was $3.11 per hour. Wages per hour were higher for males than females at all levels except for SCC individuals. In any case, the average wage of $3.11 per hour combined with less than full-time employment for the majority of program graduates indicates very little take-home pay on which to live. Dropouts earned more per hour ($3.51) than program graduates; with males earning more than females ($3.63 compared to $3.25).

The occupational status level of jobs held by both program graduates and dropouts was low; most individuals were employed as laborers or service workers. The reasons why almost all individuals were employed in low status occupations need further study.

The present study found no significant association between current employment status and enrollment in either regular or specially-designed vocational programs while in high school; this finding was true across all levels of handicap and for both program graduates and dropouts. Further, no significant relation was found between high school work experience and current employment status. However, when the proportions of employed and unemployed RTP program graduates were compared relative to general regular vocational training versus specific regular vocational training, it was found that a significantly greater proportion of individuals with <u>general</u> training were employed. This is a curious finding in that one would expect there to be a positive relation between specific vocational training and employment. It may be that the types of specific training obtained did not relate to the

individuals' current employment. Further research is needed to confirm or reject this notion.

A complicating factor in the interpretation of the data related to vocational training may be the high percentage of students who were enrolled in vocational programs; thus, we have no adequate comparison between individuals who have and have not had such experiences. We also had no means of calculating the amount of time these individuals were in these programs; content of these programs and experiences is also varied across school districts. It should also be remembered that in looking at the effects of vocational training, comparisons were made on employed versus unemployed status only. Location of employment, hours employed, and wages were not taken into consideration. Hasazi et al. (1985) found a marginal association between these variables.

No significant association was found between current employment status and paid jobs during high school for either program graduates or dropouts. This finding is at odds with the Hasazi et al. study, where a significant relation was found between paid job experiences during high school and current employment status.

There were also differences in the Iowa group compared to the Hasazi et al. (1985) subjects in terms of the persons identified as helping them find their current job. Employed program graduates as well as dropouts in the present study who had attended RTP and SCIN programs in high school reported using the self-family-friend network to find work, which is consistent with the Hasazi et al. findings. However, currently employed program graduates who attended more restrictive high school special education programs (i.e., SCIN-L and SCC) relied on school and community agencies to a greater extent for obtaining employment. This may be influenced by the finding that a higher percentage of students from the more restrictive programs were involved in

specially-designed vocational programs than the more mildly handicapped. It also should be remembered that in the present investigation individuals from more restrictive program models tended to be employed in sheltered workshop environments. While school and community agencies may be successful in helping these individuals find work, to what extent are they underestimating the work potential of these persons?

Finally, we have analyzed the results of this study according to instructional program models (RTP, SCIN, SCIN-L, SCC). The existing differences (or lack of differences) in adult adjustment across these program models may have been caused by differences in curriculum and other program experiences, or by differences in functioning levels of the individuals in these programs, or by an interaction between these two factors. The functioning level of individuals appears to decrease as the program model becomes more restrictive, as evidenced by decreases in mean IQ, math, and reading scores. The Iowa Mental Disabilities Research Project (Reschly, Robinson, Volmer, & Wilson, 1988) also found clear differences between the RTP and the special class programs in terms of program content emphasis, but no significant differences between the SCIN and SCIN-L programs. (Goals from self-contained special classes were not analyzed.) The RTP programs involved primary emphasis on academic skills. Substantial amounts of time were devoted to core academics and academic subjects in SCIN anbd SCIN-L programs, but other objectives were also emphasized, include career/vocational, community interaction, domestic skills, recreation/leisure, social skills, and study skills. One of the clear differences between resource and special class models had to do with the amount of time devoted to career/vocational objectives. Career/vocational objectives constituted only 5% of the time in RTP programs, but approximately 11-13% of the time in SCIN and SCIN-L programs.

The findings of this investigation are, for the most part, similar to other recent studies examining the post-school adjustment of mentally retarded individuals, although some similar results were specific to certain levels of handicap and not to others. Edgar (1987) has called for major changes in secondary special education programs because of the less than satisfactory adult adjustment of handicapped students. He recommends a major shift away from academics to functional, vocational, and independent living tasks. Changes such as these may very well be in order, but we ought to also consider post-school factors that might result in better adult adjustment. It may not be enough to provide a strong foundation. We must also consider support services, such as supported work (Wehman, et al., 1985) for the individual in adult life, and transition services that help the individual bridge the gap from the foundation laid in school programs to adult life.

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